IN THE CLAIMS

1-8. (Canceled)

9. (Currently amended) An optical component producing method for forming a multi-layer film, on a base, comprising:

depositing a lower refractive index layer on said base and a higher refractive index layer on said lower refractive index layer;

alternating said lower refractive index layer with said higher refractive index layer for a plurality of layers forming a basis for a stack;

depositing a tuning layer having a higher refractive index on said plurality of layers, thus forming the stack;

measuring an optical characteristic of the optical component obtained by forming the stack on the base, wherein the measurement step comprises[[:]] measuring a transmittance of the optical component formed from the stack during depositing of said tuning layer;

controlling, on a basis of the measured optical characteristic of the optical component, a thickness of said tuning layer by terminating the film formation at said tuning layer when the measured transmittance of the optical component is changed to be decreased; ~~and~~

removing a layer portion formed during a period of time from a time point when the increase/decrease of the measured mean light transmittance of the optical component is stopped to a time point when the measured mean light transmittance is changed to be decreased; and

depositing a lower refractive index layer on said tuning layer, thereby forming the multi-layer film.

10. (Canceled)

11. (Currently amended) ~~The method of claim 10, wherein if the optical characteristic measured has decreased, the method further comprising:~~A method for forming an optical component, comprising:

(i) depositing a plurality of optical layers on a base to form a surface, said plurality of optical layers comprising alternating layers of lower refractive indices and higher refractive indices, said plurality of layers forming a stack; and

(ii) controlling a thickness of one layer of said plurality of optical layers, by

(a) depositing a tuning layer having a higher refractive index on the surface of the plurality of optical layers to form a stack, wherein the tuning layer is the one layer and defines a thickness,

(b) measuring an optical characteristic of the stack to obtain a first optical characteristic value,

(c) measuring the optical characteristic of the stack after continued deposition of said tuning layer to obtain a second optical characteristic value,

(d) determining whether the second optical characteristic value has decreased as compared to the first optical characteristic value,

(e) when the second optical characteristic value has not decreased, continuing the depositing of the tuning layer to add to the stack and returning to steps (ii)(b)-(e), and when the second optical characteristic measured has decreased, terminating the depositing of the tuning layer and removing a portion of the tuning layer formed during a period of time, wherein the period of time is defined from a time point when an increase/decrease of the second optical characteristic measured of the stack is stopped to a time point when the second optical characteristic measured is changed to be decreased, and

(f) adding a layer of a lower refractive index on the tuning layer, thereby forming a multi-layer film.

12-16. (Canceled)

17. (Currently amended) The method of claim 9, wherein each of the lower refractive index ~~layer is~~ layers is SiO_2 and each of the higher refractive index ~~layer is~~ layers is Nb_2O_5.